L13 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2003:413851 CAPLUS
DN 138:404342
TI Hydrogen production from oxygenated hydrocarbons by vapor and condensed liquid-phase reforming for fuel cell use
IN Cortright, Randy D.; Dumesic, James A.
PA Wisconsin Alumni Research Foundation, USA
SO U.S. Pat. Appl. Publ., 30 pp.
CODEN: USXXCO
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2003099593	A1	20030529	US 2001-998552	20011129
	US 6699457	B2	20040302		
	CA 2467443	AA	20030605	CA 2002-2467443	20021127
	WO 2003045841	A1	20030605	WO 2002-US38180	20021127
	WO 2003045841	C1	20040304		
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	US 2003170171	A1	20030911	US 2002-306258	20021127
	EP 1458645	A2	20040922	EP 2002-804080	20021127
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, SK				
	BR 2002014560	A	20041109	BR 2002-14560	20021127
	JP 2005510437	T2	20050421	JP 2003-547304	20021127
	US 2004022723	A1	20040205	US 2003-632245	20030801
PRAI	US 2001-998552	A	20011129		
	US 2002-306258	A	20021127		
	WO 2002-US38180	W	20021127		

AB Disclosed is a method of producing hydrogen from oxygenated hydrocarbon reactants, such as glycerol, glucose, or sorbitol. The method can take place in the vapor phase or in the condensed liquid phase. The method includes the steps of reacting water and a water-soluble oxygenated hydrocarbon having at least two carbon atoms, in the presence of a metal-containing catalyst. The catalyst contains a metal selected from the group consisting of Group VIII transitional metals, alloys thereof, and mixts. thereof. The disclosed method can be run at lower temps. than those used in the conventional steam reforming of alkanes.

(FILE 'HOME' ENTERED AT 15:28:23 ON 20 JUN 2005)

FILE 'REGISTRY' ENTERED AT 15:28:44 ON 20 JUN 2005

L1	1	S	WATER/CN
L2	1	S	HYDROGEN/CN
L3	1	S	SORBITOL/CN
L4	3	S	RIBOSE/CN
L5	1	S	ARABINOSE/CN
L6	2	S	XYLOSE/CN
L7	1	S	LYXOSE/CN
L8	1	S	XYLITOL/CN
L9	1	S	ARABINITOL/CN
L10	1	S	GLYCEROL/CN

FILE 'CAPLUS, CAOLD' ENTERED AT 15:32:28 ON 20 JUN 2005

L11	20533	S	L1 AND L2
L12	108	S	L11 AND RHENIUM?
L13	1	S	L12 AND L3
L14	0	S	L12 AND L4
L15	0	S	L12 AND L5
L16	0	S	L12 AND L6
L17	0	S	L12 AND L7
L18	0	S	L12 AND L8
L19	0	S	L12 AND L9
L20	0	S	L12 AND SUGAR
L21	74	S	L12 AND CATALYST
L22	34	S	L21 AND NICKEL
L23	14	S	L22 AND SUPPORT
L24	14		DUP REM L23 (0 DUPLICATES REMOVED)
L25	0	S	L24 AND SUGAR
L26	5	S	L24 AND ALCOHOL
L27	74363	S	WATER (P) HYDROGEN
L28	150	S	L27 AND RHENIUM?
L29	0	S	L28 AND SUGAR
L30	47	S	L28 AND NICKEL
L31	35	S	L30 AND CATALYST
L32	1	S	L31 AND L3
L33	0	S	L32 NOT L13
L34	33319	S	RHENIUM
L35	141	S	L11 AND RE
L36	0	S	L35 AND L3
L37	0	S	L35 AND L4
L38	0	S	L37 AND L5
L39	0	S	L35 AND L6
L40	0	S	L39 AND L7
L41	0	S	L35 AND L7
L42	0	S	L35 AND L8
L43	0	S	L35 AND L9
L44	150	S	L27 AND L34
L45	571	S	L27 AND RE
L46	1	S	L44 AND L3
L47	0	S	L32 NOT L46
L48	0	S	L44 AND L4
L49	0	S	L44 AND L5
L50	0	S	L44 AND L6
L51	0	S	L44 AND L7
L52	0	S	L44 AND L8
L53	0	S	L44 AND L9
L54	74	S	?RHENIUM? (P) WATER (P) HYDROGEN
L55	0	S	L54 AND L3
L56	0	S	L54 AND L4
L57	0	S	L54 AND L5
L58	0	S	L54 AND L6
L59	0	S	L54 AND L7
L60	0	S	L54 AND L8
L61	0	S	L54 AND L9
L62	12	S	L54 AND NICKEL

L63 12 DUP REM L62 (0 DUPLICATES REMOVED)
L64 5 S L63 AND SUPPORT
L65 7 S L63 NOT L64

L80 ANSWER 1 OF 6 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2004:792073 CAPLUS
DN 141:425556
TI Effect of tin on Ru-B/γ-Al2O3 **catalyst** for the **hydrogenation** of ethyl lactate to 1,2-propanediol
AU Luo, Ge; Yan, Shirun; Qiao, Minghua; Zhuang, Jihua; Fan, Kangnian
CS Department of Chemistry and Shanghai Key Laboratory of Molecular Catalysis and Innovative Materials, Fudan University, Shanghai, 200433, Peop. Rep. China
SO Applied Catalysis, A: General (2004), 275(1-2), 95-102
CODEN: ACAGE4; ISSN: 0926-860X
PB Elsevier B.V.
DT Journal
LA English
AB Amorphous Ru-B/γ-Al2O3 **catalyst**, prepared by a reductant impregnation method, was employed for the **hydrogenation** of Et lactate to 1,2-propanediol. The effects of Sn on composition, properties, thermal stability and activity of the **catalyst** were studied using XRD, TEM, H2-TPD and XPS. The Sn Addition significantly increased the Et lactate conversion and the selectivity to 1,2-propanediol.
RE.CNT 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L87 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2002:76326 CAPLUS
DN 136:264814
TI Kinetics of Aqueous-Phase **Hydrogenation** of Lactic Acid to **Propylene Glycol**
AU Zhang, Zhigang; Jackson, James E.; Miller, Dennis J.
CS Departments of Chemical Engineering and Chemistry, Michigan State University, East Lansing, MI, 48824, USA
SO Industrial & Engineering Chemistry Research (2002), 41(4), 691-696
CODEN: IECRED; ISSN: 0888-5885
PB American Chemical Society
DT Journal
LA English
AB The kinetics of aqueous-phase **hydrogenation** of lactic acid to propylene glycol over a 5 wt % Ru/carbon catalyst have been characterized in a stirred batch reactor. A thorough anal. of mass-transfer resistances based on measurements of **hydrogen** solubility and gas-liquid mass-transfer coeffs., application of correlations in the literature, and intraparticle diffusion calcns. show that mass-transfer resistances are negligible at the temps. (403-423 K) and **hydrogen** pressures (6.8-13.6 MPa) studied. A Langmuir-Hinshelwood (L-H) model is proposed and used to fit lactic acid conversion kinetics. The kinetic model provides insight into the catalytic reaction mechanism and forms the basis for design and further investigation of the aqueous-phase **hydrogenation**.
RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L87 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2001:898458 CAPLUS
DN 136:263513
TI Aqueous-phase **hydrogenation** of biomass derived lactic acid to **propylene glycol**
AU Zhang, Zhigang
CS Michigan State Univ., East Lansing, MI, USA
SO (2000) 201 pp. Avail.: UMI, Order No. DA3000641
From: Diss. Abstr. Int., B 2001, 62(1), 396
DT Dissertation
LA English
AB Unavailable

L87 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2001:651042 CAPLUS
DN 136:21176
TI Aqueous-phase **hydrogenation** of lactic acid to **propylene glycol**
AU Zhang, Z.; Jackson, J. E.; Miller, D. J.
CS Department of Chemical Engineering, Michigan State University, East Lansing, MI, 48824, USA
SO Applied Catalysis, A: General (2001), 219(1-2), 89-98
CODEN: ACAGE4; ISSN: 0926-860X
PB Elsevier Science B.V.
DT Journal
LA English
AB The metal-catalyzed **hydrogenation** of lactic acid to propylene glycol (PG) in aqueous solution was investigated in a laboratory-scale stirred batch reactor. Ru/C was identified as an active catalyst for the reaction, with nearly complete conversion at 100-170° and H pressure 7-14 MPa. Selectivity to PG is >90% at 95% lactic acid conversion.
RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L87 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2005 ACS on STN
AN 2000:368184 CAPLUS
DN 133:5109
TI Condensed-phase catalytic **hydrogenation** of lactic acid to **propylene glycol**

IN Zhang, Zhigang; Miller, Denis J.; Jackson, James E.
PA Michigan State University, USA
SO PCT Int. Appl., 57 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2000030744	A1	20000602	WO 1999-US27421	19991119
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
US 6403844	B1	20020611	US 1999-442285	19991119
PRAI US 1998-109712P	P	19981124		

AB The present invention provides a process for production of propylene glycol with high yield and selectivity in an aqueous reaction mixture of lactic acid and **hydrogen** with an essentially pure elemental ruthenium catalyst on an inert support at elevated pressure and temperature In particular, the present invention provides a process wherein the catalyst is a ruthenium salt deposited on a microporous support, reduced to ruthenium on the support with **hydrogen**, and oxidized in the presence of oxygen to provide a ruthenium oxide surface on the surface of the ruthenium metal and wherein the catalyst is maintained in the surface oxidized state until it is reduced with **hydrogen** prior to the reaction process.

RE.CNT 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

FILE 'REGISTRY' ENTERED AT 15:50:25 ON 20 JUN 2005

L66 1 S PROPYLENE GLYCOL/CN
L67 1 S LACTATE/CN
L68 1 S LACTIC ACID/CN
L69 1 S METHYL LACTATE/CN
L70 1 S ETHYL LACTATE/CN

FILE 'CAPLUS, CAOLD' ENTERED AT 15:53:34 ON 20 JUN 2005

L71 836 S L66 AND L68
L72 6 S L71 AND L2
L73 6 DUP REM L72 (0 DUPLICATES REMOVED)
L74 2 S L66 AND L67
L75 0 S L74 AND L2
L76 50 S L66 AND L69
L77 2 S L76 AND CATALYST
L78 201 S L66 AND L70
L79 11 S L78 AND CATALYST
L80 6 S L79 AND HYDROGEN?
L81 1970 S 1,3-PROPANEDIOL/TI
L82 10 S L81 AND L68
L83 1 S L82 AND HYDROGEN?
L84 2206 S PROPYLENE GLYCOL/TI
L85 20 S L84 AND L68
L86 94 S L84 AND HYDROGEN?
L87 4 S L85 AND HYDROGEN?
L88 0 S L81 AND L69
L89 0 S L81 AND L70
L90 1 S L84 AND L69
L91 3 S L84 AND L70